UNITED
NATIONS

A

General Assembly

Distr.
GENERAL

A/CONF.151/PC/54
11 July 1991

Original: ENGLISH

PREPARATORY COMMITTEE FOR THE UNITED NATIONS
CONFERENCE ON ENVIRONMENT AND DEVELOPMENT
Third session
Geneva, 12 August - 4 September 1991
Plenary Session
Item 2 (c) of provisional agenda

ENVIRONMENTAL HEALTH ASPECTS OF DEVELOPMENT

CROSS-SECTORAL ISSUES

Report of the Secretary-General of the Conference

1. Decision 1/28 of the Preparatory Committee for the United Nations Conference on Environment and Development (UNCED) was addressed to the World Health Organization (WHO). In response, the WHO prepared a first progress report which was submitted as document A/CONF.151/PC/19 to the Preparatory Committee for consideration at its second session. Continuation of work on this subject was endorsed at the second session through Decision 2/6 on cross-sectoral issues.

2. The present report provides a contribution to Agenda 21 in the area of human health. This is preceded by a summary review of key linkages between development, environmental degradation and human health consequences, considering that human health is threatened by both the lack of development, and by development not accompanied by the necessary environmental safeguards.

GE.91-61850/3454B

3. The WHO Commission on Health and Environment will have held its final session in Geneva, 15-19 July 1991, after this paper had been finalized. Consequently, its final conclusions and recommendations will be reported orally to the Preparatory Committee at its third session. The section on health for Agenda 21 will be adjusted accordingly prior to its fourth session.

4. In addition, the Ministers of the Environment and of Health of the Member States of the European Region of WHO, in December 1989, adopted the European Charter on Environment and Health which covers agreed upon principles and strategies. Also, the Sundsvall Conference on Supportive Environments, 9-15 June 1991, identified action for public health. Its aim was to find practical ways to create physical, social and economic environments supportive of health and compatible with sustainable development, and to build bridges between sectors for practical problem solutions. Relevant principles, strategies and recommendations are being considered in the preparation of Agenda 21.

PART A: BACKGROUND AND ISSUES

I. INTRODUCTION

5. Health depends on a good environment. Both are desired by everyone, and development has brought better health to many. In the developed countries undernutrition and virtually all the infectious diseases associated with poor water, sanitation and housing have almost disappeared. In large areas of the developing countries, however, the very lack of development coupled with increasing population growth has had an enormous adverse effect on human health due to environmental insufficiencies and degradation. The lack of adequate and safe water, shortages of food, the lack of sanitation and grossly insufficient housing for well over one billion people are largely responsible for the many diseases which take their toll on the health and life of these populations. It is clear that economic and social development is of high priority.

6. Development has, however, not come without a price for the environment or for human health. Depletion of resources, pollution of air, land and water, and changes in hydrological regimes and vegetation cover, to name a few examples, have had deleterious effects on the health and lives of large numbers of people. Rapid urbanization and the increasing populations have made it necessary for hundreds of millions of people to reside in over-crowded and unsanitary settlements. It is clear that the battle against environmental hazards cannot be won easily, for as old problems are solved, new ones appear as the unwanted by-products of industrialization and economic development. This has been seen in the industrialized countries where microbiological pollution of water supplies and massive pollution of cities by smoke and the other common air pollutants have been largely solved, only to find "new" potential hazards in the form of minute quantities of various chemical compounds and certain physical factors with a potential threat to the health and well-being of the people.

7. Many of the countries of the world, particularly those that are in the midst of rapid industrialization, are faced with both problems - the ones still remaining because of lack of development and the ones that have

accompanied development without sufficient protection measures for health or for the environment. This part of the paper highlights the primary issues for health of both of these. Included also is a brief mention of the linkages with other issues in front of the Preparatory Committee, including the health implications of global concerns of atmospheric change, and loss of biodiversity.

II. HEALTH PROBLEMS DUE TO LACK OF DEVELOPMENT

8. The health and disease patterns of developing countries, mostly in tropical environments, are determined by poverty and poor distribution of economic resources, lack of capital investment, a high proportion of population engaged in agricultural activities, crowded and poorly serviced housing in both rural and urban areas, low levels of literacy and unrestrained population growth. The lack of social and economic development contributes to the status quo of all these health determinants.

9. Underdevelopment is linked to poor maintenance and inadequate management of the environment. Thus the endemicity of parasitic diseases, malaria, schistosomiasis, filariasis, onchocerciasis, dracunculiasis (guineaworm) leishmaniasis, African trypanosomiasis and intestinal parasitic infections is sustained in the milieu of inaction. However many of these disease problems may not be reduced - they may in fact increase - if development efforts do not avoid environmental degradation through deforestation, alteration of hydrological systems, desertification and erosion and the ensuing changes in populations movements and habitat. The epidemiology of these diseases is determined by the ecosystems of their respective vectors and the social, cultural and economic activities of the people. The public health importance of these diseases vary from one developing country to another and the lack of development will have different impacts on their progression, extention and aggravation.

10. There is a global recognition that continuation of the present rates of population growth will deter most, if not all, efforts to reduce the environmental degradation and hence the health effects. The lack of development is a paradoxical contributor to increased population growth.

11. Poverty, as a composite index of deprivation extending from command over economic resources, access to education, social support, and self-esteem, to control of housing and physical environment quality, remains the most significant predictor of urban and rural morbidity and mortality. The powerful association of poverty and poor health is evident for communicable, non-communicable and psycho-social diseases, and is reflected in comparison of health statistics between countries, within countries, and even between poor and less poor villages within a single district.

12. Taking both rural and urban poverty into account, the International Labour Organization (ILO) estimated that the number of people in the third World living in extreme poverty increased from 819 million in 1980 to

881 million in 1985. This is an increase of 62 million or 7.6 per cent in just five years. Moreover, on the basis of present population growth projections and assuming that the distribution of income remains unchanged, the ILO projects a further rise in the number of living in extreme poverty to 913 million by 1995 which may be distributed as follows:

POPULATION LIVING IN POVERTY

	1980	1985	1995 (projections)
Africa	210	278	405
Asia	562	538	450
Western Hemisphere	47	65	58
Total	819	881	913

Roughly, 90 per cent of the absolute poor live in rural areas, considering the Third World as a whole ("absolute poor" being determined nutritionally).

13. Lack of education is at the roots of the lack of development. On the other hand, without development the rates of education and basic literacy will remain low. Maternal education is a powerful determinant of child survival. Education is essential to enhance the capacity of the individual and communities in developing countries to take initiatives to protect and promote health.

14. Development brings with it new roads or canals, that offer enhanced access to markets and better ways to move agricultural produce and industrial goods. In tandem, electrification raises the capacity of local economic activities, agricultural production and food processing, and improved sources of domestic water supply and management of sanitation. Radio and television are powerful tools in the environment - health - development process; allowing increased access to information will potentially change attitudes towards health and the environment.

15. Lack of development forces the continued use of increasingly scarce biomass, in the form of wood or other types of biomass, and exposes 700 million persons to increased risk of acute and chronic upper respiratory disease. Women and children are particularly vulnerable due to the use of this biomass in inefficient and poorly ventilated stoves which maintain high concentrations smoke and toxic gases in the home. Biomass fuel and low-grade coal use contribute to the twofold higher mortality due to obstructive lung disease in developing countries as compared to developed countries.

16. The current figures on the extent of human suffering due to disease in developing countries are staggering. Mortality under age five years is close to 100 per 1000 live births and 14 million children die annually in the first five years of life. Most of the deaths are due to acute respiratory diseases (4.3 million) and diarrheal diseases (4 million). High infant mortality is the major factor in the shorter life expectancies at birth in developing countries, e.g. 54 years in Africa and 68 years in Latin America compared to 75 years in developed countries.

17. Nutritional deficiencies, caused by lack of food crops or access to food supplies, increases the vulnerability in children to infectious diseases and is compounded by the lack of sanitation and water supplies. 15-20 per cent of the developing world's population suffers from insufficient food intake. 16 per cent of all infants, some 20 million children, are born with low birth weights and the highest prevalence is observed in the developing countries of sub-Saharan Africa and Southeast Asia.

18. Crowded quarters and lack of vaccination, as well as continued exposure to high levels of indoor air pollution from incomplete burning of low-grade fuel and poor ventilation, contribute to the occurrence of outbreaks of respiratory diseases. Among these tuberculosis remains one of the most dramatic effects of the lack of development. Having nearly disappeared as a cause of death in the industrialized countries, 60 per cent of the 2.5 million deaths still occur in South-East Asia among economically productive adults, and the remaining cases occur in other developing countries.

19. Inadequate disposal of human excreta, combined with water shortages limiting personal hygiene are the main cause of the repeated occurrence of diarrhoeal episodes (some 1,500 million in children in 1989) due to contamination of food and drinking water.

20. Some forms of cancer are more common in the tropics than in temperate areas are due to environmental factors. Cancer of the liver is a frequent sequela of hepatitis B - a very common but often inapparent infection in tropical countries, probably transmitted from carrier mother to child. While the infection itself is unrelated to the environment, the eventual development of hepatocellular carcinoma in people that have been so infected appears to be favoured by continued asymptomatic exposure to aflatoxins produced by a mould in cereals and other foodstuffs that have been stored in a humid and hot environment. Urinary schistosomiasis, endemic in 55 countries, is associated with an otherwise unusual type of cancer of the bladder, making it one of the most frequent in highly endemic areas.

21. Lack of access to health services is a fundamental characteristic of underdevelopment. The inadequacy of health services is directly reflected in absence of prevention of infectious diseases. Although immunization coverage in children throughout the world has reached 65 per cent, the proportion of children immunized in Africa is less than 50 per cent. Availability of oral rehydration, a simple and effective intervention, for control of diarrheal diseases is much more limited in least developed countries.

III. DEVELOPMENT RELATED HEALTH HAZARDS

22. Development is the process of fulfilling people's legitimate aspirations to adequate food and shelter, sufficient and safe water supply, access to education and health care. It involves changes in resource availability, patterns of consumption and greater participation of people in decision-making. Development means greater equity, government systems which are more representative, decentralized and accountable, more community involvement, and an increasing trust of the responsibility and skills of local

people. Inevitably, the process of development will have short and long-term environmental and therefore health implications. The dilemma will be to avoid or minimize conflicts between economic development, necessary for the immediate improvement of human health, and the protection of the quality of the environment on which the long-term maintenance of human health critically depends. Only a few examples can be given here, concerning key aspects of agricultural practices, energy production and industrial development, that suggest how human activities related to development can affect human health through their interaction with the environment.

Intensified Agricultural Production

23. Increased availability of safe and nutritious food requires extension of cultivated areas and therefore of water resources, adoption of intensive farming practices, reduction of pre- and post-harvest losses, spoilage and wastage, improved distribution. The achievement of each of these has environmental implications with health consequences that require careful weighing before decisions are made. Because most productive land is already under cultivation, extension would inevitably take place at the expense of marginal land or forests whose poor soils would be further impoverished, resulting in erosion, soil degradation and, ultimately, in desertification, undermining the very productive base on which populations need to rely for improving their nutritional state. In addition, the move into new land may expose farmers and their families to unfamiliar diseases against which they might not know how to protect or they do not have immunity.

24. Increased productivity can be achieved using increasing amounts of fertilizers, introducing or expanding irrigation or switching to new crops or cultivars. Each of these options has its environmental consequences and health implications. The liberal use of chemical fertilizers may threaten the quality of both surface and ground waters posing risks of methaemoglobinaemia (blue-baby syndrome) in infants and of eutrophication with reduction of freshwater resources. Switching from cash crops to subsistence crops means forswearing major sources of tradeable produce and therefore of income. Reduction of pre- and post-harvest losses requires the use of pesticides and, unless intensive educational programmes are conducted and good practice used, will result in unnecessary exposure and accidents of the type described below. Avoidance of spoilage requires adequate storage facilities to avoid losses and careful inspection of food to ensure its safety. Because highly populated areas are not necessarily the most productive, reliable means of rail and road transport are needed if mass movements of people in search of food are not to occur. Peace and adequate income are obviously required to ensure that food is available to all.

25. The need to increase agricultural production has led to the widespread use of chemicals to control weeds, moulds, insects and other pests. Developed countries have so far been the main producers and users of pesticides but the percentage growth in use has been increasing much faster in developing countries, especially Africa. A much greater fraction of the population being engaged in agricultural activities in developing than in developed countries, exposure to hazardous pesticides is also greater. The main risk is acute poisoning from single short-term exposure, sometimes due to attempted suicide

(an event that is not infrequent in some countries) but mostly because of unintentional misuse or inadequate protection. Severe cases, including attempted suicides, are estimated to number 3 million per year, of which over 200,000 end in death. A larger number of milder cases go unreported. In addition, some 750 000 cases (5 per cent of them cancers) of chronic effects from long-term exposure are thought to occur yearly. The great majority of both acute and chronic cases occur in developing countries.

26. Nearly half of the world's population of 5 billion people are at risk of malaria, a risk which is sustained by deforestation, irrigation, strip mining and urbanisation. A majority of the 1-2 million deaths from malaria each year occur in the "frontier" areas of economic development.

27. Schistosomiasis is a scourge of water resources development in small reservoirs and irrigation systems, and now threatens the urban periphery in northeast Brazil and Africa. Six hundred million people are exposed to the risk of schistosomiasis infection. Water resources development also contributes to the risk of filariasis for 905 million people, with the risk of disfiguring elephantiasis of the extremities and genitalia. Dracunculiasis (guineaworm) associated with small water bodies threatens degraded endemic areas. Rural development without attention to environmental protection promotes the breeding of Aedes, the mosquito vector of dengue and yellow fever, whose recent spread in the Americas in this decade has been dramatic.

28. Leprosy affects up to 12 million persons, 2/3 of whom are found in areas of environmental degradation in the tropical forests of Latin America, Africa and South East Asia.

29. Increasing rodent population in areas of intensive irrigated agriculture are creating new health risks of bacterial, viral and parasitic diseases. Examples are the newly recognised high incidence of relapsing fever in irrigated areas of northern Senegal, and the continuing spread of Lyme disease, both associated with ticks and small mammals.

Industrialization and Energy Production

30. Industry is necessary to produce the building materials, the tools, the machinery and the chemicals (including medical and veterinary pharmaceuticals) that a country would otherwise have to import. It is also necessary to create exports, especially in those countries that, switching from cash to subsistence crops, are losing a source of external income or may be forced to pay for imported food. Industrialization is therefore an essential ingredient of development, but would not be possible without the availability of affordable energy sources. Basic as it is to industry, energy has a major role in making it possible to cook food and heat houses, but also to raise and distribute water and to power vehicles. Immediately related to health, energy is needed in an urban environment to power purification and water treatment plants and run medical and hospital facilities. Coal and petrol currently represent the major sources of energy as well as the main feedstock for chemical energy. Hydropower will certainly be further developed in some

countries. Nuclear power is unlikely to be extended significantly beyond those countries that now use it and those with facilities under construction. Other forms of energy, except biomass for domestic uses, are at present of marginal importance.

31. Developed countries provide countless examples of both the benefits of industrialization and energy availability, and of the harm that they both have inflicted to the environment and, through it, to human health when poorly planned. Though not exclusive of that area, this is nowhere more apparent than in parts of Eastern Europe plagued by major problems due to irrational siting of industry, large scale use of poor fuels such as soft coal, lack of control equipment, unrealistic legislation and inadequate surveillance of workers. The situation there is the legacy of a disregard of predictable environmental damage and, at least initially, ignorance of its eventual effects on human health.

32. Preoccupation with the problems arising from these should not lead to losing sight of the reflections of development in the household. Availability of electricity and bottled gas, still a dream in most developing areas, will reduce indoor air pollution and bring down the prevalence of respiratory diseases. But the development of cottage industries will also increasingly become a significant component of economic development and present at micro-level many of the problems of larger-scale activities. Checking them is much more difficult owing to the multitude and diversity of foci involved, with activities ranging from electroplating to tanning to weaving to dry-cleaning. Yet their very number and ubiquity may have an environmental and health impact as serious as that of the much less numerous heavier industries. Exposure of the workers, including children, to unsanitary working environments and exploitation may be common. Inspection, infrastructure and training designed for the special conditions of cottage industry will be necessary.

33. Air pollution is the most obvious and more generalized environmental change from industrial activities and energy production and use. It affects human health directly, as mentioned earlier, as well as through the damage it brings to buildings, vegetation and freshwater resources. There is no reason this should happen. Thoughtfully selected siting, use of pollution control equipment appropriate to the fuel or feedstock processed, rational disposal of wastes and strict compliance with good operational practice, and continued adherence to workers' protection measures should ensure that environmental and health problems are reduced to a minimum. The major difficulty will be to set up the infrastructure that makes planning, operation, surveillance and quality control effective and routine, and to avoid tempting technological short cuts. These short cuts may appear economic in the immediate term, but will be paid for later in terms of environmental and health damage, and ultimately in extremely high costs for clean-up and restoration. Training of responsible manpower at all levels to be aware of the environmental hazards that their activities may bring about is a necessarily expensive but essential component of any large scale expansion of industrial and energy-producing activities.

34. Industrial accidents may involve scores or thousands of individuals when they happen in large plants handling or containing hazardous materials, or when whole valleys are flooded with the bursts of high dams. Industrial

accidents have occurred in developed and developing countries alike. But taking into account the fact that developing countries have only a fraction of the industrial and energy-producing world potential, the frequency of serious accidents is unacceptably high. Weakness of the regulatory system and laxity of its enforcement, often obsolescence of equipment are likely to be the principal causes of accidents. Sometimes the adoption of new and locally untried technologies or the hasty adaptation to local conditions of technologies well tested makes accidents more likely if workers and their supervisors lack experience with the hazards of the technologies and how to control them. Often local medical and hospital facilities lack the means, the experience and the versatility for handling a sudden influx of victims presenting with unfamiliar symptoms. Prevention of accidents through discipline and preparedness must be a constant preoccupation of all countries, but the need is the more urgent in newly-industrialising countries.

Urbanization and Urban Development

35. Urban growth has outstripped society's capacity to meet human needs, leaving hundreds of million of people with inadequate incomes, inadequate diets and inadequate housing and services. All too often urban development is associated with destructive effects on the physical environment and the resource base needed for sustainable development, leading to illnesses, accidents, crime and other social pathologies.

36. In the developed countries, where population growth has slowed to very low rates, the major impacts of urban development on health and the environment result from technological changes, from changes in family and social structures associated with psychosocial problems such as drug abuse, crime, mental illness, and vandalism, from poverty, increased consumption of resources, changing diet, changing residential patterns, shifts in transportation, and the exhaustion of the environment's capacity to absorb wastes. Many of their cities need to extend and replace deteriorating infrastructures and to control pollution more effectively.

37. In developing countries, the major impacts of urban development on health and the environment result from:

a. rapid and massive urban population growth, both in the increasing number of megacities and in secondary cities;

b. crowding and "densification" of human settlements, with overcrowding, congestion, and traffic, and increased occupation of urban land subject to landslides, floods, and other natural hazards;

c. ever-growing numbers of people living in extreme poverty, many of them - especially women and children - at high health risk;

d. increasing biological, chemical, and physical pollution of air, water and land from industrialization, transportation, energy production, and the increasing generation and improper disposal of commercial and domestic wastes; and

e. the overwhelming of the financial and administrative resources of cities to provide such infrastructure as water and sanitation, to provide for adequate employment and housing, to manage wastes, and to ensure security, environmental controls, and health and social services.

38. Urban health problems occur in all countries, but are most severe in developing countries, because (a) their urban populations - and particularly those living in poverty - are growing so fast, (b) environmental changes have produced a pattern of health problems that includes both the diseases typical of underdevelopment, and the diseases typical of developed communities, (c) the resources for response are relatively meagre, maldistributed and misplaced, and (d) inadequacies in governmental structures and policies inhibit effective responses.

39. Urban development has been associated with new communicable disease risks. Examples include: AIDS, where a major contributing factor in the current pandemic is the degradation of the rural environment and the ensuing deterioration of urban social conditions; poor housing in urban and rural slums in Latin America exposes 90 million persons to risk of Chagas' disease; once a rural disease, leishmaniasis is now a risk in urban areas in the Eastern Mediterranean and South East Asia; dog rabies remains a threat to 2.8 billion people.

40. The concentration of resources - economic, technological, human - in cities provides a stronger basis for action than is found in more dispersed rural settlements.

41. Many developed countries still experience high levels of pollution in urban areas from industrial activities, energy production and use, and, increasingly, transport. Air pollution is responsible for a significant fraction of chronic respiratory diseases and asthma. Some studies have noted an association with lung cancer, but a causal relationship has not yet been proven. Lead-based antiknock additives to petrol, emitted to the atmosphere from car exhausts, are still one of the major sources of exposure to lead in many countries. The results of a number of investigations indicate that the neuro-behavioural development of children is significantly and irreversibly impaired by such exposure.

42. Transport accidents, particularly car accidents, are a major cause of mortality, morbidity and permanent disability in both developed and developing countries, in urban and rural areas. Indeed in most industrial countries they rank third (after heart disease and cancer) as a cause of lost years of life.

IV. LINKAGES TO OTHER ISSUES

43. Each of the substantive issues considered by the two Working Groups of the Preparatory Committee have health dimensions, although to varying degrees. Health considerations are central for dealing with urbanization, freshwater supplies, toxic chemicals and hazardous wastes, and they have been referred to in this paper, as well as in the papers on these specific issues.

In addition, there are the primary global problems such as global atmospheric changes and loss of biological diversity which, too, have implications for health. A brief outline of these is given below.

Health consequences of global atmospheric changes

44. Global changes in atmospheric composition, especially an increased concentration of "greenhouse" gases of which carbon dioxide is the most important, could have major consequences for human health by altering climate and raising the sea level. Food production may be reduced by climatic change and flooding of low lying areas. A rise in sea level involving dense population areas could also provoke large numbers of refugees. Global warming is likely to create conditions that alter the distribution of vectors of disease, such as mosquitoes. The increase in level and duration of heatwaves will have a severe impact on those persons with impaired cardiovascular, respiratory, endocrine or immune function, and infants and children and the elderly are likely to exhibit increased morbidity and mortality associated with this heat stress.

45. Continued releases of chlorofluorocarbons used as foam blowing agents, refrigerants and electronic circuitry cleaning agents deplete the stratospheric ozone layer which absorbs solar ultraviolet B radiation. Should the ultraviolet flux at ground level increase significantly a rise in skin cancers is expected. This is now happening among fair-skinned adults, but is probably still unrelated to ozone depletion but rather due to intense exposure to sunlight.

The importance of maintaining biodiversity

46. The maintenance of the diversity of ecosystems and of living species and strains is as essential to the preservation of a fully functional environment and to the very existence of life on earth as the maintenance of the quality of air, waters and soils. Since there is another document which considers the issue from various viewpoints, only the health implications of the disappearance of ecosystems and species is examined here.

47. To the extent that health is dependent on the integrity of the environment, biodiversity is a major concern in promoting health effectively. There are also more specific if subsidiary considerations that justify it on a global scale. The natural history of a number ecosystems is poorly known and their species not yet inventoried. Tropical forests, coral reefs, and mangrove swamps, but also arid grasslands and mountain tundras are the most glaring examples. They are all in the process of being seriously damaged or destroyed. The species communities they contain are highly diverse and contain strains that, crossed with domestic varieties, have provided new cultivars with higher yields, resistance to arid conditions or other desirable features, thus contributing significantly to the solution of feeding people. Some species have yielded invaluable drugs, from quinine to reserpine, and more may be present in inadequately explored habitats. Arthropods, many of them still not described or classified, may be used to combat pests, thus reducing crop losses, or disease vectors.

48. All these reasons make the conservation of biodiversity a priority for health. The respect for biodiversity, however, cannot be blind. There are species unconditionally harmful to people. There are habitats where those species breed. Eradication of these scourges should not be avoided for the sake of maintaining biodiversity, but neither should eradication be carried out without careful weighing of its environmental consequence.

V. THE NEED FOR HEALTH-ORIENTED DEVELOPMENT ACTION

49. Sustainable development is a strategy for social and economic development which implies the meeting of the needs of the present generation without compromising the ability of future generations to meet their own needs. It follows that health and sustainable development are interdependent; but the relationship is also reciprocal: sustainable development depends on efforts to improve health and to reduce environmental risks to health; achievement of health for all in accordance with the principles of primary health care depends on the sustainability of social and economic development, on the sustainable use of natural resources for reliable food supplies and energy for human development, on healthy cities and on the prevention of environmental health risks which originate in the development process itself.

50. Mutual support of health and sustainable development can be achieved only through simultaneous strengthening of health services and promotion of effective collaboration between all public sectors in matters of health. Each sector will have to determine the contribution it can make to sustainable development in the light of its own mandates and programmes and its human and financial resources. This applies fully also to the national health agencies and to WHO. Fulfilment of the health-and-conservation approach requires committeed efforts at all levels, down to the grassroots, where the successful implementation of primary health care involves community participation in determining priorities in the development process. The construction of a permanent health infrastructure strong enough to meet present health needs, and flexible enough to respond adequately to future needs as they arise, is a key component of sustainable development.

51. There is a growing awareness in other public sectors of the role they may play in the promotion of human health, of the adverse effects their development activities may have on human health, and of the need to minimize such effects through intersectoral preventive action in collaboration with the health authorities. This awareness has yet to be translated into policies.

52. New health problems associated with development will require more research as a basis for more informed decision-making in the interests of sustainable development. These problems are no longer faced by the industrial countries alone; they are becoming a challenge also in the developing countries, especially the exposure to pollution and contamination (chemical, physical and biological) in water, the air and food, at the place of work, even in the home. More research is needed also on the health aspects of food supply and proper nutrition, and of life and lifestyles in urban and peri-urban areas where crowding and many other determinants affect the

physical and mental health of a large number of people. WHO has a major role to play in achieving a better understanding and in undertaking assessments of the complex interactions between these factors and health, and of the technology available for their control.

PART B: OPTIONS FOR AGENDA 21

Programme Areas

53. As outlined in the previous section, the impacts on human health of, both underdevelopment, and unsustainable development, can be enormous and diverse. The actions which are required to deal with this situation also need to be substantial and cover a wide ground. Four main areas have been identified for consideration for Agenda 21. They are:

A) Basic Health Needs Related to the Environment;

B) Control of Communicable Diseases;

C) Meeting the Urban Health Challenge;

D) Reducing Health Risks from Environmental Pollution and Hazards.

Each of these is described in the following sections.

The programme activities relevant for (A) and (D) above are dealt with largely in the relevant sectoral papers. They are listed here mainly to show clearly the need for a broad-based approach to health and environment.

A. BASIC HEALTH NEEDS RELATED TO THE ENVIRONMENT

Basis for Action

54. Despite some improvement in the 1980s, a large proportion of the population of the developing world still has no ready access to safe water and sanitation. The situation is worst in three WHO regions, with a total population of well over two billion people.

Population lacking safe water and sanitation in three regions 1990

	Africa (millions)	South-East Asia (millions)	Eastern Mediterranean (millions)
Population	487	1 310	392
No safe water	263 (54%)	452 (35%)	108 (28%)
No adequate sanitation	263 (54%)	935 (71%)	224 (57%)

55. Globally, food grain production has been rising faster than the population and should be sufficient for decades to come, but about one fifth of all people live in a state of absolute poverty with insufficient means to meet their daily needs. Each year many millions face hunger or starvation as a result of natural catastrophes, crop failures and the effects of conflict and civil strife.

56. By the year 2000, it is estimated that the already vast numbers of urban poor will have risen to include 77 per cent of all families in cities - the majority living in slums and shanty towns with all the health risks and social deprivation that this entails.

57. Specific options for action on water supply, sanitation and shelter are dealt with in the options for Agenda 21 for Freshwater (A/CONF.151/PC/42/Add.7), Solid wastes (A/CONF.151/PC/42/Add.10) and Human settlements (A/CONF.151/PC/56).

B. CONTROL OF COMMUNICABLE DISEASES

Basis for Action

58. Advances in the development of vaccines and chemotherapeutic agents have brought many communicable diseases under control. However, many important communicable diseases remain for which environmental control measures are indispensable - diarrhoeal diseases, leishmaniasis, malaria, schistosomiases and other vector-borne diseases, to mention only a few.

59. In all such instances, the environmental measures, either as an integral part of primary health care, or undertaken outside the health sector (municipalities, planning authorities, departments of the environment, agricultural development programmes etc.), form an indispensable component of overall disease control strategies and, in some cases, even the only component. Environmental control of communicable diseases includes water supply and sanitation, pollution control, food quality control, integrated vector control, garbage collection and disposal. Unfortunately, the standards and degree of coverage of environmental health programmes leave much to be desired in many countries, due to lack of resources, imperfect understanding of the problem, or poor planning and weak environmental policies. As a result, much damage has been done to the quality of the environment and human health, which will require great effort and vast resources to repair.

60. The major challenge for the 21st Century and beyond will be to have health incorporated as a legitimate development objective. The development community needs to undergo a major change in attitude and action. Health needs to become a central concern and not to be addressed as a marginal problem after everything else.

Objectives

61. At national level, action plans for the environmental control of communicable diseases need to be established as intersectoral initiatives, - advised, coordinated and monitored from within the public health sector.

These plans should define goals and objectives in terms of reductions in the rates of disease and death due to communicable diseases associated with the environment.

62. A global monitoring system for endemic diseases, in particular those with a potential for transboundary spread, based on data collection at the primary health care level, should be operational by the year 2000. Specific targets have been set by WHO for:

(a) elimination of Guinea worm by the year 2000;

(b) eradication of polio and measles by the year 2000;

(c) effective control of onchocerciasis (river blindness) and leprosy by the year 2000;

Indicators of progress are reductions in the incidence and the associated morbidity and mortality of the main communicable diseases related to the environment, e.g. malaria, cholera, hepatitis, sleeping sickness, soil-transmitted helminths and schistosomiasis.

Activities

63. Control of endemic diseases is not the exclusive responsibility of the health sector. It requires intersectoral cooperation and coordination, which in many countries today are lacking, fragmented, inadequate or ineffective. The roots of this failure lie in political and administrative constraints, which prevent interaction, dialogue and the coordination of activities within the overall developmental process. National action plans must therefore include:

(a) strengthening of intersectoral action through the secondment of experienced health professionals, to relevant sectors, such as planning, housing, agriculture;

(b) development of guidelines for effective intersectoral coordination, to be included in professional training curricula and post descriptions including the assessment of risks and development of control methodology;

(c) intensifying multidisciplinary research into the identification of health risks associated with the environment, particularly in the context of development including focus on the mitigation and environmental control of tropical diseases linked with development.

(d) wider application of environmental management methods in the prevention and control of vector-borne diseases and other communicable diseases associated with economic development;

(e) improving public information and health education on the risks of endemic communicable diseases and on environmental methods for their control;

(f) increasing the capacity of national public health systems to identify environmental hazards in the causation of communicable diseases and to intervene if required;

(g) improving early diagnosis and adequate treatment capacities for communicable diseases in the primary health care system;

(h) establishing monitoring systems of epidemiological data to ensure adequate forecasting of introduction, spread or aggravation of communicable diseases, followed by appropriate intervention.

C. MEETING THE URBAN HEALTH CHALLENGE

Basis for Action

64. For hundreds of millions of people, the poor living conditions in urban areas are destroying lives, health, and social values. Urban growth has outstripped society's capacity to meet human needs, leaving hundreds of million of people with inadequate incomes, inadequate diets, inadequate housing and services, and exposed to environmental pollution. Urban growth has outstripped the capacity of municipal governments to deal with solid waste collection and disposal, with air pollution from road traffic, industrial activities and other sources. Neighborhood environments and housing are damaging to health, and people are often exposed to air pollution, pollution (and inadequate supply) of water, heavy traffic, excessive noise, and indoor air pollution associated with burning of biomass fuels for heating and cooking. All too often urban development is associated with destructive effects on the physical environment and the resource base needed for sustainable development.

65. "Air pollution (indoor and outdoor) is associated with excess morbidity and mortality from asthma and bronchitis and water pollution with diarrhoeal disease, hepatitis, and other conditions. Overcrowding and inadequate housing contribute to respiratory diseases, tuberculosis (which is on the rise in countries where the incidence of AIDS is high, particularly in adults), meningitis and other conditions. Poor environmental conditions in residential areas (including inadequate security of tenure, and such problems as noise and heavy traffic) make a further contribution to stress, mental problems, accidents, violence, anti-social behaviours and drug and alcohol abuse.

Objectives

66. The objective is to improve human health (and socio-economic conditions) in urban areas, including the health and well-being of homeless people and of low-income settlement dwellers in cities.

67. Health includes physical, psychological and social aspects, as measured by reduction in mortality and morbidity from infectious and non-infectious diseases, reduction in psychosocial problems, improved child development, and greater social well-being.

68. Targets could be expressed by an improvement in the following health and environmental indicators. It must be recognised that there are wide variations in the current status of the following indicators, between nations, between cities within nations, and perhaps most importantly within cities themselves, i.e. the intra-urban variation. Studies of health status in developing country cities indicate that intra-urban variation in infant mortality rates of 3-5 times is not uncommon. Consequently it is important that each city set targets based on its own data (including the intra-urban variation), and commonly targeting a 10-40 per cent improvement in each indicator over a decade. Reduction of intra-urban variations (ie greater health equity) should be a priority in all cities.

69. The specific indicators of greatest utility in target setting for health status include the infant mortality rate (IMR); the percentage of children whose weight-for age and/or weight-for-height are acceptable; the percentage of newborns weighing at least 2500 grams at birth; life expectancy at birth, by sex, in all identifiable subgroups; specific disease rates (particularly respiratory diseases and tuberculosis, as indicators of crowded housing, diarrhoeal diseases, as indicators of inadequate water and sanitation), including incidence rate and mortality rate, industrial accidents, and social problems (drug and alcohol abuse, crime); and transport accidents (deaths and injuries).

70. With regard to related areas of housing provision and urban environmental quality also targets need to be set. These issues have been dealt with in other documents on air pollution (A/CONF.151/PC/59), freshwater (A/CONF.151/PC/42/Add.7), and human settlements (A/CONF.151/PC/56).

Activities

71. Urban development, when guided by the above objectives, includes the following activities:

(a) development of a municipal health plan including relevant social and environmental components. This requires (a) political commitment of the city to improved health and well-being, and reduced inequalities in the city; (b) building-up of intersectorial committees at both the political and technical level; and (c) establishing collaborating links with scientific, cultural, medical, business, social and other city institutions, using networking to gain political support and mobilize resources for technical programmes to improve health and the environment;

(b) strengthening of community participation in urban improvement activities, by the adoption of an "enabling strategy" by the municipality, that emphasises "doing with" rather than "doing for" (or providing services for);

(c) raising awareness, through (a) public education for health (in schools, work place, mass media, etc.); (b) survey of the existing health, social and environmental conditions in the city;

documentation of intra-urban differences can be a valuable strategy to draw public attention to problems, to assist urban managers and planners in their work, and in mobilizing resources;

(d) strengthening of environmental health capabilities, to provide environmental services in water supply, sanitation, solid waste management and pollution control, and to allow use of health impact and environmental impact assessment procedures for urban development projects; this may involve basic training and in-service training of new and existing personnel;

(e) establishment of collaborative activities and links with other cities (city networks), in order to exchange models of good practice;

72. The WHO "healthy cities" programme includes all of the above elements. The above activities involve the municipal government, with participation by community organizations, and scientific, cultural, medical, business, social and other city institutions.

D. REDUCING HEALTH RISKS FROM ENVIRONMENTAL POLLUTION AND HAZARDS

Basis for Action

73. In many locations around the world the general environment - air, water and land - work places and even individual dwellings are so badly polluted that the health of hundreds of millions of people is adversely affected. This is due to past and present developments in energy production and use, in industry, in transportation, etc., with little or no regard for environmental protection. While there have been notable improvements in most of the developed countries, this has not happened, as a rule, in the developing countries where the deterioration in environmental conditions continues.

74. Most severe development-related environmental health hazards exist in the newly industrialized countries. Pollution control and health protection measures have not kept pace with economic progress. A recent WHO study revealed that only 10 out of 60 such countries have established effective natural pollution control mechanisms.

75. This situation persists due to the lack of national priority for environmental protection, lack of the requisite programmes and infrastructures and the lack of resources for "cleaning up" the environment. While the obstacles are formidable, especially with respect to resources, major improvements can be made.

Objectives

76. The overall objective is to clean up and maintain the environment to a degree that human health is not impaired and yet allow development to proceed. Specific programme objectives are:

(a) to have appropriate environmental and health safeguards implemented as part of development;

(b) to have adequate national infrastructures and programmes in place for providing for the requisite pollution surveillance and to ensure that abatement activities are implemented;

(c) to have the necessary information on hand for identifying the health effects and supporting the most cost effective pollution control, prevention and abatement measures.

Activities

The major programme activities will be:

(a) the development of national programme capacities for environmental protection, including monitoring and assessment, with international support (multilateral and bilateral);

(b) internationally coordinated research and investigations concerning exposures and the accompanying effects due to pollution, and for developing and introducing cost-effective methods for preventing and abating pollution;

(c) operation, through EARTHWATCH, of national, regional and global projects for measuring the environmental quality and effects on health and the progress being made in these areas and for identifying new environmental risks for health.

Other programme activities are dealt with in the discussion on capacity building in the document on technology transfer (A/CONF.151/PC/53) and in the options for Agenda 21 for atmosphere (A/CONF.151/PC/42/Add.1), freshwater (A/CONF.151/PC/42/Add.7), toxic chemicals (A/CONF.151/PC/42/Add.8), hazardous wastes (A/CONF.151/PC/42/Add.9) and human settlements (A/CONF.151/PC/56).